

*Nasco*  
**Life/form**®

**CRiSis™ MANIKIN**  
**COMPLETE RESUSCITATION SYSTEM**  
**LF03650U**  
**INSTRUCTION MANUAL**



**WARNING: THIS PRODUCT CONTAINS DRY, NATURAL RUBBER!**

**Life/form**® Products by NASCO

## **Limited Warranty**

NASCO warrants to the purchasers of **CRiSis™** manikin products that they will be free from defects in material and workmanship for a period of three years from the date of purchase. NASCO will repair any defect reported within three years of the date of purchase at no charge. Products found to be defective may be returned to the authorized NASCO dealer from whom the item was purchased, or returned directly to NASCO. NASCO will be liable under this limited warranty only if **CRiSis™** manikin products have been serviced properly as directed in the operating manual.

NASCO will not be responsible for damage caused by unauthorized repairs or modifications that have been made, or if the product has been damaged through misuse, accident, or abuse. This warranty does not cover wear and tear or expendables such as batteries, lubricant, and replacement lungs. There are no other expressed or implied warranties of merchantability, fitness of purpose, or otherwise on **CRiSis™** manikin products, parts, and accessories.

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The Complete **CRiSis™** Manikin is a Complete Resuscitation System that allows training of CPR, airway management, IV therapy, blood pressure readings, and defibrillation. Update packages are available for all versions of both **CPARLENE®** and Resusci Anne™\*.

This manual will guide you in setting up, using, and maintaining each of the available components. Each section also includes a list of replacement parts, supplies, and auxiliary equipment.

By reading and following all instructions carefully and completely, you can be sure your **Life/form® CRiSis™** Auscultation Manikin will provide years of valuable service.

### **Cleaning:**

Normal surface soil can be removed from the trainer with mild soapy water. Do not allow water to contact electrical components. Stubborn stains may be removed with REN Cleaner (W09919U). Simply apply the REN Cleaner to the soiled area and wipe clean with a soft cloth.

*NOTE: Avoid using cleaner around the mouth area if students will be applying direct mouth-to-mouth resuscitation techniques, as the cleaner may be toxic if ingested. NEVER place the trainer on any kind of printed paper or plastic. These materials, as well as ballpoint pens, will transfer indelible stains. Do not use any cosmetics.*

### **List of Components:**

- **CRiSis™** Manikin
- IV Arm
- Blood Pressure Arm with Speaker Wire
- Electronic Blood Pressure Control Unit
- Defibrillation Chest Skin
- 8 oz. Lubricant
- REN Cleaner
- 3cc Syringe with Needle
- 12cc Syringe with Needle
- 2 IV Bags
- 3 Pinch Clamps
- Small Towel (2)
- Butterfly Infusion Set
- Synthetic Blood
- 4 "AA" Batteries
- Sphygmomanometer

\*Resusci® Anne™ is a trademark of Laerdal Medical Corporation.



**NASCO Life/form® “Airway Larry”  
Airway Management Head**

### **About the Simulator...**

The **Life/form® “Airway Larry”** Airway Management Trainer is the most realistic simulator available for the training of intubation and other airway management skills.

NASCO has taken great care to create an airway management trainer that is anatomically correct in respect to both size and detail. Landmarks include: nostrils, teeth, tongue, oral and nasal pharynx, larynx, cricoid ring, epiglottis, arytenoid, false and true cords, trachea, esophagus, “Airway Larry” lung set, and stomach.

NASCO’s “Airway Larry” allows you to practice oral, digital, and nasal intubation. E.T., E.O.A., PTL®, and Combitube® insertion can all be practiced as well (please see “Using the Combitube®”). Suction techniques and proper cuff inflation can also be performed and evaluated.

### **Lubricating the Airway Trainer Head:**

Lubricate both the simulator and supplies being used with the NASCO pump spray lubricant provided (Figures 1 & 2).



**Figure 1**



**Figure 2**

*NOTE: NASCO recommends the use of the provided lubricant or a similar vegetable-based lubricant for the Airway Management Trainer head. The use of a silicone-based lubricant may cause damage to the simulator, thus voiding NASCO’s warranty on the trainer.*

### **Set Up:**

#### **A. Connecting the Airway**

1. The manikin’s airway has been disconnected to prevent damage during shipping. To connect the airway, remove the chest skin, chest plate, compression springs, and upper compression plate.

*NOTE: Caution must be taken not to damage the defibrillation electronics attached to the chest skin when removing the skin from the manikin.*

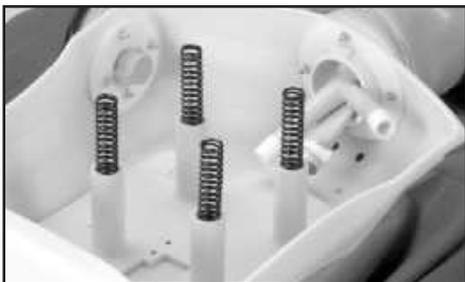


**Figure 3**

2. Remove the lung bags from the upper compression plate. Connect the right and left lung bags to the adapters in the right and left bronchi (Figure 3).

## **B. Installing the Chest Compression Plate**

1. Remove the compression springs from packaging. Insert the springs into the four plastic cylinders extending up from the lower compression plate (Figure 4).
2. Before replacing the upper compression plate, make sure the lung bags are connected to the tracheal tube extending from the lower portion of the neck of the Airway Management Trainer head.



**Figure 4**

3. Position the upper compression plate over the springs so that each of the springs fits up into a cylinder on the bottom of the upper compression plate (Figure 5).



**Figure 5**

4. Place the lung bags through the hole in the center of the upper compression plate so they rest on top of the plate (Figure 6).



**Figure 6**

5. Place the chest plate back over the upper compression plate and lungs.
6. Reattach the chest skin by adjusting the Velcro® edges. Again, be careful not to damage the electronics attached to the chest skin.

## **Cleaning & Maintenance:**

To clean the Airway Management Trainer head, you will need to remove the head from the manikin. To do so, disconnect the lungs from the bronchi. Then, rotate the head so that it is facing backwards. The large tab on the front of the neck should be aligned with the keyway in the torso. Tilt the head upward until it snaps free. Disengage the smaller rear tabs from the neck opening and pull the head from the body (Figure 7). Reverse these steps to reattach the head.



**Figure 7**

Next, take the trainer to an area with a sink and open counter space. Using the red caps supplied, plug off the right bronchus (the esophagus should already be plugged). Stabilize the head on the counter face-up (towels work well for this) with plugged tubes hanging over the sink (Figure 8). Carefully pour warm soapy water (a mild dish soap works best) into the mouth until the water level reaches halfway up the tongue. Tilt the head back and bring the neck up 3" off the counter-top.



**Figure 8**

Continue filling until the water level covers the tongue. At this point, take a small soft brush and gently scrub the inside of the mouth (a small toothbrush works well for this). Cotton swabs can be used to scrub inside the nostrils. When done, pull the plug from the esophagus and drain the water into the sink. Now pick the head up to a vertical position and pull the plugs from the trachea to completely empty the system (Figure 9).

### **Rinsing the Airway:**

To rinse the airway, follow the same procedure using clean, warm tap water. Repeat this process until all the soap has been flushed from the system.



**Figure 9**

### **Disinfecting the Airway:**

To disinfect, repeat the standard cleaning procedure, but this time use a bleach solution, as specified by the Centers for Disease Control, instead of soapy water. Fill the system with the solution until it reaches the corners of the mouth. Remember to start filling with the head flat and finish with the neck slightly elevated to ensure that the solution completely fills all airway passages. Once completely filled with the bleach solution, allow the head to sit for at least 10 minutes. Drain as described earlier and repeat the rinsing process to flush out all of the bleach solution. Set the head aside and allow it to dry completely.

### **Using the Combitube®:**

Thoroughly read and follow the instructions that come with the Combitube®. The trainer will accept either a full-size or a small adult tube. As with a live patient, it may be necessary to back the tube out slightly if ventilation cannot be established.

*NOTE: Depending on tube placement, the large cuff may not accept the recommended amount of air. In this case, simply inflate the cuff to its maximum volume (when the plunger stops) and, while holding the plunger down, detach the syringe from the blue pilot balloon, and proceed.*

### **Supplies/Replacement Parts for Airway Management Trainer Head:**

LF03285U Replacement Lungs  
LF03644U NASCO Pump Spray Lubricant  
W09919U REN Cleaner



**Figure 1**

## NASCO Life/form® Injectable Training Arm

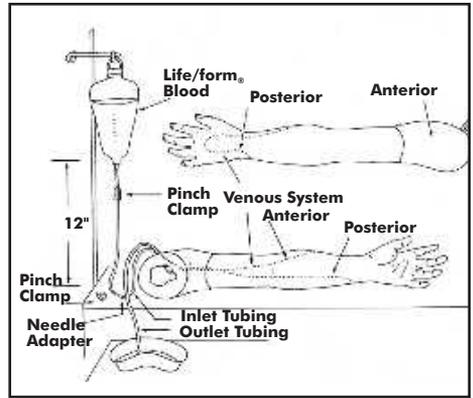
### About the Simulator...

The **Life/form®** Injectable Training Arm Simulator (Figure 1) duplicates the human condition as closely as modern plastics technology allows — it is almost the real thing. Its care and treatment should be the same as with a patient; abuse or rough handling will damage the simulator — just as it would cause pain to a patient.

Although this arm will provide years of trouble-free usage, the skin and veins can be readily replaced when needed. The outer skin is easily peeled off revealing the “core” and veins, providing, literally, a brand new arm. The life of the replaceable skin and veins will be prolonged by utilizing smaller needle sizes (such as 20- to 25-gauge). However, if instruction with larger needle sizes is required, this can be done; the skin and veins will merely need to be replaced sooner. The Skin and Vein Kits are available through NASCO (see page 9 for list of supplies).

### Internal Structure:

Internally, the vascular structure (rubber tubing) begins at the shoulder and continues under the arm, crosses the antecubital fossa forearm, makes a loop in the back of the hand, and then returns to the underarm. This venous system (Figure 2) is constructed of special plastic tubing



**Figure 2**

with the lumen being the approximate size of a human vein. This vascular structure has an inlet tubing and an outlet tubing at the shoulder. It is via these tubes that synthetic blood is injected and removed, thus allowing practice in the techniques of blood drawing and starting intravenous infusions.

### General Instructions for Use:

#### A. Preparing the Synthetic Blood

1. Fill the pint bottle containing synthetic blood concentrate with distilled water (Figure 3).
2. Pour the synthetic blood into one of the bags (Figure 4).

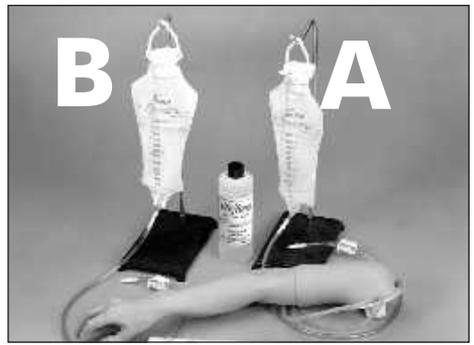


**Figure 3**



**Figure 4**

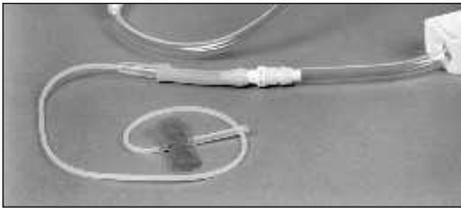
3. Be sure the clamp on the IV tubing is closed, and hang the bag no more than 18" above the level of the arm.
4. Attach the end of the IV tubing to one of the shoulder tubings.
5. With the other shoulder tubing in a basin or sink, gradually "flush" the vascular system with synthetic blood by slowly opening the clamp. Allow some "blood" to pass through the system until the air bubbles have been eliminated.
6. Once the system is filled, use one of the pinch clamps to close off the blood outlet tubing. The venous system is now full of "blood" and pressurized. Be sure to leave the clamp on the IV tubing open.
7. After filling the venous system according to instructions, the arm is now ready for you to practice drawing blood. Blood can be drawn anywhere along the pathway of the vein. Distilled water, rather than alcohol, should be used to prepare the sites. Synthetic blood will actually be aspirated once the vein is properly punctured.
8. Small diameter needles (20- to 25-gauge) should be used.



**Figure 5**

## **B. Preparing the Arm for Intravenous Infusions**

1. Close the clamp at the end of IV bag A tube, then fill with water (distilled water is recommended), and hang not more than 18" above the arm (Figure 5).
2. Appropriate intravenous infusion needles (or butterflies) should be used, and distilled water is recommended as an infusion.
3. IVs can be started anywhere along the pathway of the simulated vein. Cleanse the sites with distilled water only.
4. Attach the adapter end of the IV tubing into one of the shoulder tubing ends.
5. Place the other shoulder tubing end in a basin or jar, and "flush" the vascular system by opening the clamp. Allow infusion (water) to pass through the system until air bubbles are eliminated. Shut off the flow with a pinch clamp. The venous system is now full and pressurized.
6. Insert an IV needle or butterfly in the vein. "Flashback" will indicate proper insertion.
7. Close the clamp on IV bag A tube and remove pinch clamp from shoulder tubing.



**Figure 6**

- Attach latex needle adapter to IV needle and IV tubing (Figure 6). Proof of proper procedure will then be evidenced by the flow of infusion fluid from the IV bag B. Control flow rate with clamp on IV set B. This fluid can be used over. If more realistic experience is desired with "blood flashback" instead of water when inserting butterfly into lumen of vein, use next procedure C.



**Figure 7**

### **C. Recommended Procedure for Simultaneous IV Infusions and Drawing Blood**

Using two IV bag kits, hook up and install (Figure 7) with IV bag A and IV bag B. Remove air vent from bag B.

- Begin with synthetic blood in IV bag A. Open clamp on both A and B to pressurize system. "Flush" system by allowing "blood" to flow into container B until bubbles in tubing disappear, then regulate blood flow from bag A (using clamp). System is now full of "blood" and pressurized. "Blood" can now be drawn anywhere along the pathway of the vein.

- Intravenous infusion — insert butterfly into lumen of vein. Proof of correct insertion is evidenced by flashback of "blood." Insert end of IV tubing into butterfly. Adjust flow to desirable rate with clamp. With this arrangement the IV bag B, when full, may be easily switched with A.

*NOTE: always regulate flow of "blood" from the raised bag, and open the other clamp.*

### **D. Intramuscular Injections**

The procedure for administering intramuscular injections can be practiced in the area of the deltoid. Prep the site with distilled water only. These injections can be done utilizing the appropriate needle and syringe.  $\frac{1}{2}$  cc of distilled water may be injected, however, we recommend utilizing air as injectant since the distilled water cannot be drained, but must evaporate from the arm. Synthetic blood must NEVER be used for injections.

### **Troubleshooting:**

If "blood" cannot be aspirated during the blood drawing procedure:

- The clamp is not opened.
- There are kinks in the tubing of IV sets.
- Tubing has been pinched shut by constant pressure of pinch clamps. Lumen remains pinched occasionally even if pinch clamps are loosened. Slide clamp to new position and with fingers manipulate tubing at pinched site to restore lumen. In heavy use, slide clamp to new position on tubing from time to time to prevent the "permanent pinch" caused by constant clamp pressure. Replace IV kit.
- If these measures do not unplug the venous system, try using a large 50cc syringe to force fluid through the tubing.

5. If none of these measures work, peel back the skin (soap up arm and skin generously with Ivory® liquid detergent) of the arm to the knuckles (do not remove from fingers), and examine all tubing for possible kinks. Soap up arm and skin generously with Ivory® liquid detergent, and return skin over arm.

### Care of Simulator:

After each class use, disconnect “blood” and flush the venous system. Return synthetic blood to the storage bottle. Remove pinch clamps and IV sets from arm. Use tap water to flush the venous system and wash the outside of the arm with Ivory® liquid detergent and water. Excess water may be removed from the arm by raising the hand, lowering the shoulder, and draining it into a sink or basin. Always remove the pinch clamps from shoulder tubing and drain excess water from veins before storing.

### Cautions:

1. This synthetic blood is specially formulated to be compatible with the self-sealing veins and plastics used in manufacturing the arm.
2. NEVER use synthetic blood for intramuscular injection.
3. DO NOT use dull or burred needles as these will cause leaks in the system. Burred needles will cause permanent damage. Use smaller needles (20- to 25-gauge).
4. DO NOT allow “blood” to dry on the simulator — it may stain the skin.
5. Use only 500cc of infusion fluid, as

a larger amount will also increase the pressure of the venous system, resulting in leaks.

6. DO NOT clean the simulator with solvents or corrosive material as they will damage it.
7. DO NOT use for subcutaneous injection. NASCO’s Intradermal Injection Simulator (LF01008U) is specially designed for intradermal injection training and practice.
8. NASCO Vein Tubing Sealant Kit (LF01099U) will extend the life of the tubing.

### Supplies/Replacement Parts for Injectable Training Arm:

<b>LF00845U</b>	<b>Life/form®</b> Venous Blood, 1 quart
<b>LF00846U</b>	<b>Life/form®</b> Venous Blood, 1 gallon
<b>LF01099U</b>	Vein Tubing Sealant Kit
<b>LF03215U</b>	Skin and Vein Replacement Kit
<b>W09199U</b>	REN Cleaner

## **NASCO Life/form®** **Blood Pressure Simulator** **About the Simulator...**

The NASCO **Life/form®** Blood Pressure Simulator is designed for years of maintenance free operation as a training tool for not only the nurse, doctor, or pre-hospital healthcare provider, but also for anyone involved in the training of health care professionals.

The NASCO **Life/form®** Blood Pressure Simulator has digitally recorded blood pressure sounds that can be varied by pulse rate and volume. The different Korotkoff phases can be identified and an optional auscultatory gap can be selected. A palpable radial pulse is present in the wrist. For additional uses, purchase the Blood Pressure Speaker System (SB20146U) for group demonstrations or review.

### **List of Components**

1. Case
2. Arm with speaker wire
3. Electronic control unit
4. 6 "AA" batteries
5. Sphygmomanometer

### **General Instructions for Use:** **Installing the Batteries**

Take the Blood Pressure Electronic Control Unit from the box and turn it over, placing it face down onto a padded work surface. Locate the "Open" compartment on the back of the panel where the batteries are to be installed. **(See figure 1.)** Place your thumb or index finger on the "Open" compartment and push up.

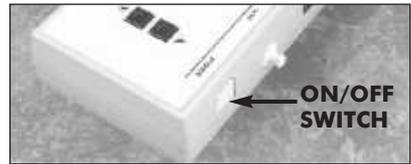
This will open the battery compartment. The compartment is marked as to the "+" and "-" positions of the batteries. The battery bracket is now accessible to the user.



**Figure 1**

Install 6 "AA" batteries as indicated by the orientation diagram embossed in the bottom of the bracket. It is recommended that alkaline batteries be used for increased battery life. After the batteries have been properly installed, reassemble the Blood Pressure Simulator by simply reversing the disassembly procedures. Place the unit face up on the work surface and turn it on by pressing the on/off switch on the top right of the unit. **(See figure 2.)** Observe the display and verify that a readable display is present, indicating proper battery installation.

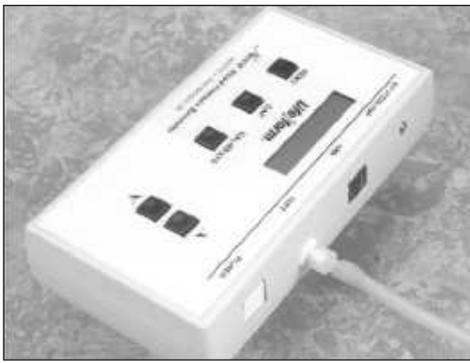
**Note:** The control box has a battery saving feature which will turn the unit off after about 8-10 minutes if no keys are used within that period of time.



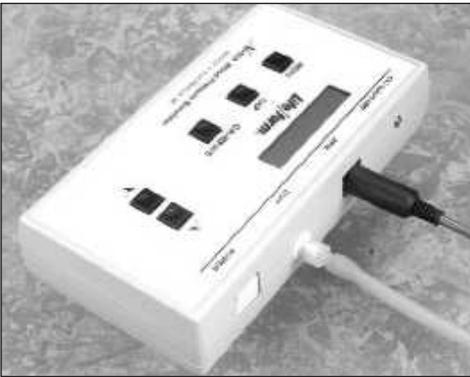
**Figure 2**

The next step is to connect the simulated arm and speaker assembly along with the sphygmomanometer cuff and gauge assembly included with the unit. First, locate the end of the pressure line attached to the sphygmomanometer that has the female luer fitting attached to it. Attach this to the male luer fitting at the top of the unit marked CUFF. **(See figure 3.)** After the pressure line fitting has been properly installed, locate the plug that is at the end of the wire which extends from the simulated arm assembly. Insert the plug from the arm into the jack at the top of the unit marked ARM. **(See figure 4.)**

At this point the Blood Pressure Simulator is ready for use. The unit has been factory calibrated for use with the accessories included in the kit. No further calibration adjustments should be necessary at this time. If the unit is to be used with a sphygmomanometer other than that supplied with the unit, or if recalibration is necessary at a later date, then see the section titled "Calibration Procedures".



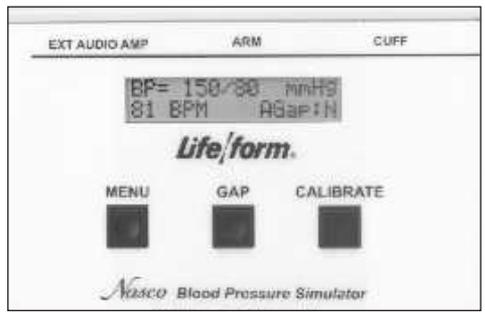
**Figure 3**



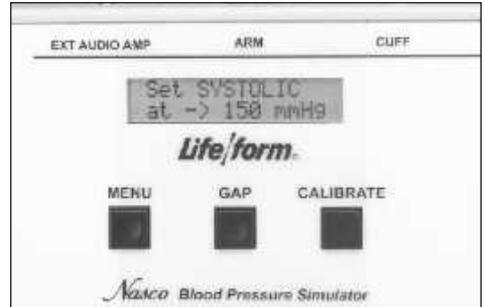
**Figure 4**

### Familiarizing Yourself with the NASCO Life/form® Blood Pressure Simulator Control Panel

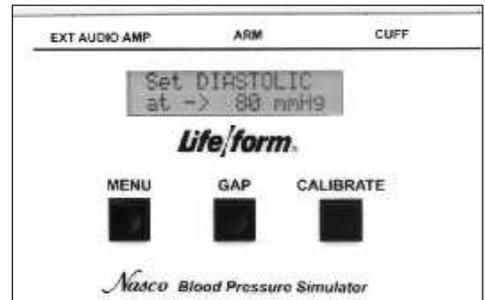
Under the display window are three buttons: Menu, Gap, and Calibrate. (See figure 5.) The systolic pressure is set by pressing the Menu key once. The pressure is adjusted up or down using the up or down arrow keys. (See figure 6.) The diastolic pressure is set by pressing the Menu key a second time. Adjust the setting up and down with the arrow up or down keys. (See figure 7.) The heart rate is set by pressing the Menu key a third time, and adjusting the rate with the arrow up and down keys. (See figure 8.) The pulse rate can be set from 0 beats per minute to 300 beats per minute. (See figure 8.) The palpation can be set to either on or pulseless. When the pulseless setting is used, the diastolic and systolic pressures will automatically be set to 0.



**Figure 5**



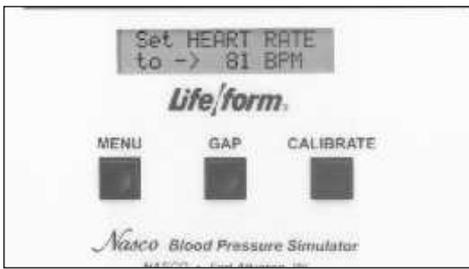
**Figure 6**



**Figure 7**

### Palpable pulse feature

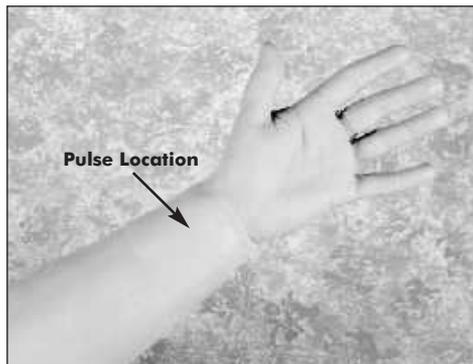
The NASCO Life/form® Blood Pressure Simulator also incorporates a palpable pulse at the radial location. (See figure 9.) Palpations can be felt upon start-up of the unit or after blood pressure settings have been made. Press the Menu key repeatedly until "Set PALPATION" menu appears. "Pulse ON" is defaulted and enables the palpation feature. Palpations continue during inflation until the cuff pressure reaches the systolic set point, and resumes when the cuff pressure reaches the systolic set point during the deflation of the cuff.



**Figure 8**

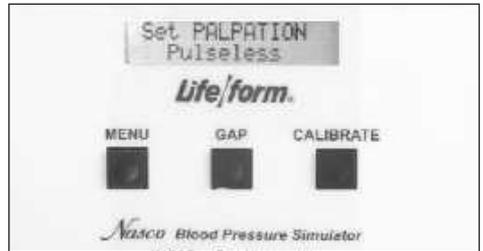
A pulseless condition can be simulated by switching your unit to the “pulseless” mode. Press the Menu key repeatedly until “Set PALPATION” menu appears. By pressing the down arrow at this point, palpations can be disabled causing the simulator to be pulseless. When in the “pulseless” mode, all settings are automatically reset to 0 and all blood pressure sounds are disabled.

The pulseless setting will also turn off the sounds in the arm. The pulse will always be on unless the pulseless feature is activated or if the systolic or heart rate levels are set to zero. To do this, press the Menu key four times. The down arrow key will set the pulse to pulseless. Press the arrow up key to turn the pulse back on. **(See figure 10.)** Located to the right of the Menu key is the auscultatory Gap key. **(See figure 11.)** This key is included to simulate the auscultatory gap that is sometimes present between phase 1 and phase 2 sounds in which no audible sound is noted during this portion of auscultation. This control function is included so that the trainee can become familiar with this phenomenon.



**Figure 9**

Pressing the Gap key simply turns the gap function off or on. When the key is pressed, a message will briefly appear that the auscultatory gap is enabled or disabled. Also the main display will show (at the bottom right of the display) either AGap:Y (for on) or AGap:N (for off).



**Figure 10**



**Figure 11**

The arrow up and down keys also control the volume of the sounds that are present in the arm. From the main menu, press the up arrow key to increase the volume, press the down arrow key to decrease the volume. The volume levels can be adjusted from level 1 (the lowest volume) to level 7 (the highest volume).

### **Using the NASCO Life/form® Blood Pressure Simulator**

First, verify that the pressure line tubing from the sphygmomanometer and the audio line coming from the simulated arm assembly are properly connected to the blood pressure simulator unit, as previously described in the set up procedures. Apply the sphygmomanometer cuff and gauge to the simulated arm assembly in the usual manner. Apply the stethoscope to the simulated arm also in the usual manner. Set the systolic and diastolic controls to the desired levels. Select the auscultatory gap if desired. Finally, adjust the pulse rate control to the desired setting.

To proceed with the simulated blood pressure measurement, first close the valve on the sphygmomanometer bulb tightly and begin pumping air into the cuff until the gauge reads higher than the preset systolic level chosen. Once this point is reached, loosen the valve on the bulb slightly to allow the gauge pressure reading to decrease slowly. While monitoring the arm assembly with the stethoscope, note the point on the sphygmomanometer gauge when the first Korotkoff sound is heard. This will be the systolic blood pressure. Allow the pressure in the cuff to continue to decrease until the point at which the last pulse is heard, noting the reading on the gauge. This is the diastolic blood pressure.

Compare the results of reading the systolic and diastolic blood pressures on the gauge with the respective settings on the simulator. If the readings were accurate they should compare favorably with the preset values. If the auscultatory gap had been selected, then an absence of an audible pulse would have been noticed during what would have been the phase 2 Korotkoff sound. It is this lack of an audible pulse that is considered an auscultatory gap. Note that in reality the auscultatory gap can be present in either the phase 1 or phase 2 Korotkoff sounds. If it is desired to demonstrate the sounds heard while measuring a subject's blood pressure to the trainee or group of trainees, an auxiliary blood pressure speaker amplifier system is available (SB20146U). If the auxiliary speaker is used, the speaker is plugged into the EXT AUDIO AMP jack located next to the ARM output jack at the top of the unit. Adjust the volume control to increase the output of the auxiliary speaker amplifier, and proceed with the blood pressure measurement sequence as it would normally be performed except that the stethoscope need not be used. Instead, listen to the sounds as they emanate from the speaker amplifier, noting the differences in the Korotkoff phases being presented.

The NASCO **Life/form**® Blood Pressure Simulator is programmed to demonstrate the 5 Korotkoff phases, including an auscultatory gap, which can be heard during auscultation of a subject, while measuring the subject's blood pressure. Each is distinctly different and present for only a portion of the measurement sequence.

## Low Battery Indicator

When the battery supply diminishes to a level near the point that the unit will no longer function properly, the "low batt" segment of the systolic pressure display will activate when the pressure in the sphygmomanometer cuff reaches above 20 mmHg. At this point, the batteries should be replaced as soon as possible in order to insure proper operation of the unit. Refer to the section titled "Installing the Batteries."

## Calibration Procedures

To calibrate the simulator, set the unit up as described in the section titled "Using The NASCO **Life/form**® Blood Pressure Simulator." Apply the cuff to the simulated arm. Set the control box systolic pressure to 150 mmHg and set the diastolic pressure to 70 mmHg. Proceed with a simulated blood pressure measurement. Note the discrepancy in the readings between the gauge and the control box. Set the systolic "offset."

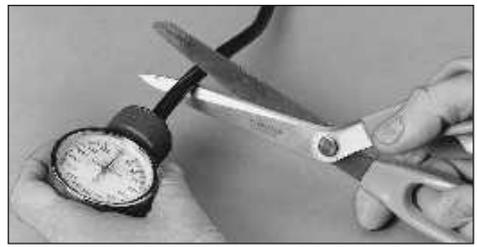
**Example:** If the blood pressure reading was taken and the sounds started at 148 mmHg, then the offset is +2. If the sounds started at 152 mmHg, the offset is -2. For this example, assume that the sounds started at 148 mmHg. Press and hold the Calibration key until the systolic correction window appears. (**See figure 12.**) Using the arrow up key set the correction to +2. Set the diastolic offset.

**Example:** If the blood pressure reading was taken and the sounds stopped at 72 mmHg, the offset is -2; or if the sounds stopped at 68 mmHg, the offset is +2.

For this example, assume that the sounds stopped at 72 mmHg. From the systolic window, press the Menu key to change the diastolic window. **(See figure 13.)** With the arrow down key, set the correction to -2. Press the Menu key again and the message “CALIBRATION COMPLETE” will appear. The main menu window will be displayed.

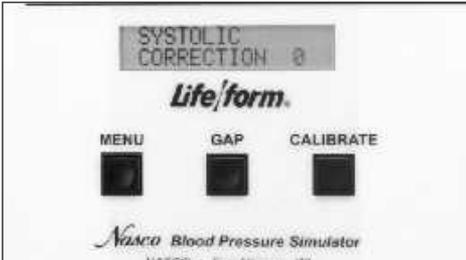
### Preparing Your Equipment for Use with the NASCO Life/form® Blood Pressure Simulator

To adapt your sphygmomanometer for use with the simulator, it is first necessary to obtain the luer fitting and the T-fitting included with the simulator, which is also available through your NASCO catalog sales office. Using a wire cutting pliers or similar instrument, carefully cut the pressure line of the sphygmomanometer about 2" from the gauge. **(See figure 14.)**



**Figure 14**

Lastly, take the loose end of the tubing and push the female luer fitting into it. **(See figure 17.)** Attach the female luer fitting to the fitting marked CUFF at the top of the unit. Once all of the necessary connections have been properly made, go to the section titled “Calibration Procedures” and calibrate the unit. When the calibration procedures have been completed, the simulator is ready for use.



**Figure 12**



**Figure 15**



**Figure 16**



**Figure 13**

Take the T-fitting and insert it between the two ends of tubing that were previously cut. **(See figure 15.)** Assemble the portion of pressure line tubing over the remaining barbed end on the T-fitting. **(See figure 16.)**



**Figure 17**

### Supplies/Replacement Parts for Blood Pressure Simulator

**LF01096U** Electronic Control Unit with Sphygmomanometer

**SB20146U** Blood Pressure Speaker System



## NASCO Life/form® Defibrillation Chest Skin

### About the Simulator...

The **CRiSis™** System Defibrillation Chest Skin has been designed to absorb a maximum of 360 joules of energy\*. Although capable of absorbing 360 joules, we do recommend that the smallest energy level possible be used while training with the skin.

The **CRiSis™** System Defibrillation Chest Skin will enable you to practice defibrillation using manual, semi-automatic, and automatic external defibrillators (AEDs). When using any one of these in training, always follow the recommended operating procedures for that particular defibrillator.

The **CRiSis™** Manikin comes with the Defibrillation Chest Skin in place and ready for use.

*\*NOTE: 360 joules is the maximum energy level that NASCO recommends administering to the Defibrillation Chest Skin. Energy levels in excess of 360 joules may cause irreparable damage to the chest skin, circuitry, and patient simulator being used — thus voiding*

*NASCO's warranty and endangering your equipment. NASCO assumes no liability for damage or injury that may be caused by the use and/or misuse of this equipment. All normal safety precautions for defibrillation training should be followed and energy levels should be minimized. NASCO did not design nor intend this Defibrillation Chest Skin to be used as anything other than a training apparatus for defibrillation.*

### Connecting Your Arrhythmia or Patient Simulator:



**Figure 1**

NASCO has designed the **CRiSis™** System to be compatible with a variety of patient simulators. This is possible via the standard four-lead snap cable (Figure 1). If your patient simulator has only two output posts, the red and black leads must be connected to the patient simulator.

You may want to connect the manikin to the simulator that came with your defibrillator. If your patient simulator doesn't have the standard snap connectors, it will be necessary to purchase the corresponding adapters from NASCO. To order, please see "Supplies/Replacement Parts" on page 16.

Once your manikin is connected to your patient simulator, you will be able to pick up the ECG waves either through the monitor hook-ups on the skin or through the two disks attached to the skin on the defibrillation sites.

These disks will enable you to pick up the ECG wave using either the “Quick Look” paddle option or directly through gel pads, just like on a real patient.

It is possible to use AED gel pads with the cable connectors built into the gel — the same ones you use on patients. In an effort to help you save money, NASCO does offer a set of defibrillation pad and patient simulator adapters that will correspond to your particular AED unit. These defibrillation pad and patient simulator adapters can be reused again and again. They come as a set. (See “Supplies/Replacement Parts” at right.)

### **Troubleshooting:**

#### **Problem:**

ECG wave is not being picked up from the manikin.

#### **Solution:**

1. Check your connections on the patient simulators, one or more may be disconnected.
2. Check to make sure your patient simulator is plugged in and working properly.

#### **Problem:**

ECG wave is inverted.

#### **Solution:**

Recheck the position of the red and black lead snaps on the patient simulator.

*NOTE: If the defibrillation skin is not functioning or wiring comes undone, please contact us to repair or replace the unit. Failure to do so, or unauthorized repair may void the warranty or cause further harm or damage to you or your equipment.*

### **Supplies/Replacement Parts for Defibrillation Chest Skin:**

LF03656U	Physio Control Defibrillation Pad and Patient Simulator Adapter Package
LF03657U	Marquette Electronics Defibrillation Pad and Patient Simulator Adapter Package
LF03658U	SpaceLabs, First Medic, or Laerdal Defibrillation Pad and Patient Simulator Adapter Package
LF03691U	Zoll Training Cables with Adapters
LF03962U	Physio Control Training Cables with Adapters

*NOTE: If you need help selecting the training pad adapters that correspond to your AED unit, please feel free to call us at 1-800-558-9595 for assistance.*

## Other Available *Life/form* Simulators

- LF00698U** Adult Injectable Arm (White)  
**LF00856U** Female Catheterization  
**LF00901U** Prostate Examination  
**LF00906U** Ostomy Care  
**LF00929U** Surgical Bandaging  
**LF00957U** Enema Administration  
**LF00958U** Pediatric Injectable Arm  
**LF00961U** Intramuscular Injection  
**LF00984U** Breast Examination  
**LF00995U** Arterial Puncture Arm  
**LF00997U** Adult Injectable Arm (Black)  
**LF00999U** Pediatric Injectable Head  
**LF01008U** Intradermal Injection Arm  
**LF01012U** Heart Catheterization (TPN)  
**LF01019U** Ear Examination  
**LF01020U** Supplementary Ear Set  
**LF01025U** Male Cath-Ed I  
**LF01026U** Female Cath-Ed II  
**LF01027U** Peritoneal Dialysis  
**LF01028U** Suture Practice Arm  
**LF01036U** Spinal Injection  
**LF01053U** Cross-Sectional Anatomy, Torso, Head  
**LF01054U** Cross-Sectional Anatomy, Head  
**LF01062U** Pelvic, Normal & Abnormal  
**LF01063U** Stump Bandaging, Upper  
**LF01064U** Stump Bandaging, Lower  
**LF01069U** Cervical Effacement  
**LF01070U** Birthing Station  
**LF01082U** Cricothyrotomy  
**LF01083U** Tracheostomy Care  
**LF01084U** Sigmoidoscopic Examination  
**LF01087U** Central Venous Cannulation  
**LF01095U** Blood Pressure Arm  
**LF01108U** Intraosseous Infusion Simulator  
**LF01142U** Auscultation Trainer  
**LF01162U** Venatech IV Trainer  
**LF03000U** **CPARLENE®** Series  
**LF03601U** Adult Airway Management Trainer  
**LF03602U** Adult Airway Management on Manikin  
**LF03603U** Adult Airway Management Head Only  
**LF03609U** Child Airway Management Trainer  
**LF03610U** Child Airway Management Trainer Head Only  
**LF03611U** Child Defibrillation Chest Skin  
**LF03612U** Child IV Arm  
**LF03613U** Child Blood Pressure Arm  
**LF03614U** Child Intraosseous Infusion/Femoral Access Leg Only  
**LF03615U** Complete Child **CRiSis™** Update Kit  
**LF03616U** Child **CRiSis™** Manikin  
**LF03617U** Deluxe Child **CRiSis™** Manikin with Arrhythmia Tutor  
**LF03620U** PALS Update Kit  
**LF03621U** Infant Airway Management Trainer Head Only  
**LF03622U** Intraosseous Infusion Right Leg  
**LF03623U** Infant Airway Management Trainer  
**LF03626U** Child Femoral Access Injection Pad Replacement  
**LF03632U** Child Intraosseous Infusion/Femoral Access Leg on a Stand  
**LF03633U** Child Airway Management Trainer with Torso  
**LF03693U** **Basic Buddy** CPR Manikin  
**LF03699U** "Airway Larry" Airway Management Trainer  
**LF03720U** **Baby Buddy** Infant CPR Manikin  
**LF03953U** **CRiSis™** Manikin  
**LF03955U** Deluxe **CRiSis™** Manikin  
**LF04001U** **GERi™** Nursing Manikin  
**LF04020U** **KERi™** Nursing Manikin  
**LF04021U** **KERi™** Basic Manikin  
**LF04022U** **KERi™** Advanced Manikin  
**LF04030U** **GERi™** Advanced Manikin  
**LF04040U** **GERi™** Basic Manikin

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